

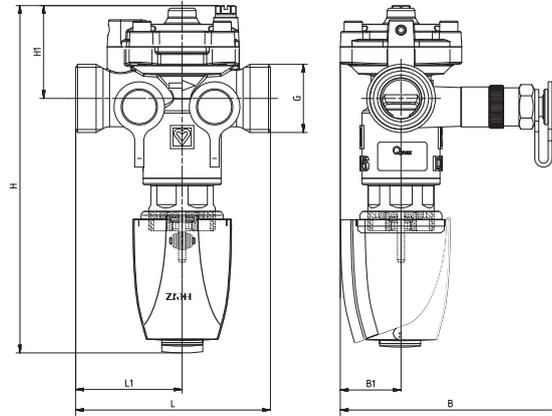
# HERZ-Motorised flow controller

## Control and regulating valve

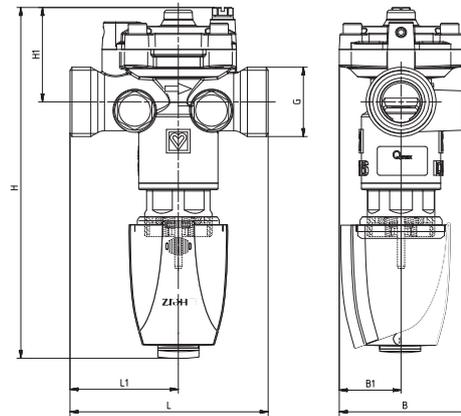
Data sheet **4006 SMART**, Issue 0516

### ☑ Dimensions in mm

#### 4006 M



#### 4006 R



	Order number	DN	G	L	L1	B	B1	H <sub>without Actuator</sub>	H <sub>with Actuator</sub>	H1
M	1 <b>4006</b> 20	15 LF	3/4	75 mm	41 mm	85 mm	24 mm	104 mm	154 mm	36 mm
	1 <b>4006</b> 21	15	3/4	75 mm	41 mm	85 mm	24 mm	104 mm	154 mm	36 mm
	1 <b>4006</b> 22	20	1	75 mm	41 mm	85 mm	24 mm	105 mm	155 mm	33 mm
	1 <b>4006</b> 29	15 MF	3/4	75 mm	41 mm	85 mm	24 mm	104 mm	154 mm	36 mm
R	1 <b>4006</b> 60	15 LF	3/4	75 mm	41 mm	50 mm	24 mm	104 mm	154 mm	36 mm
	1 <b>4006</b> 61	15	3/4	75 mm	41 mm	50 mm	24 mm	104 mm	154 mm	36 mm
	1 <b>4006</b> 62	20	1	75 mm	41 mm	50 mm	24 mm	105 mm	155 mm	33 mm
	1 <b>4006</b> 69	15 MF	3/4	75 mm	41 mm	50 mm	24 mm	104 mm	154 mm	36 mm

### ☑ Technical data

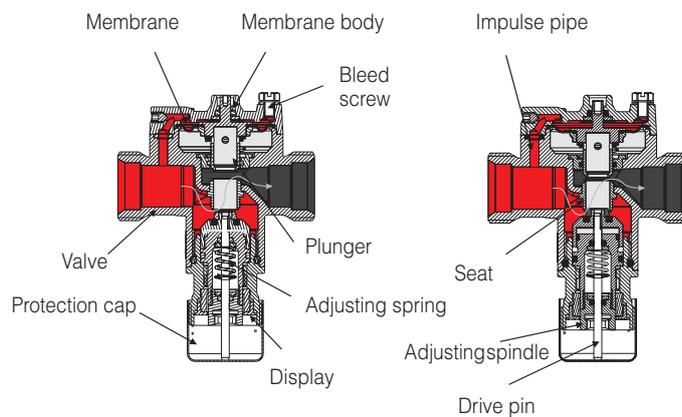
Max. operating pressure	16 bar
Max. differential pressure on the body	4 bar
Min. operating temperature	2 °C (pure water)
Min. operating temperature	- 20 °C (frost protection)
Max. operating temperature	130 °C
Lift	4 mm

The integrated control unit together with the actuating drive is responsible for modular control. Various actuating drives might be used (see also chapter: Accessories and spare parts).

### Application

The Pressure Independent Balancing Control Valve (PIBCV) is used in all heating and cooling systems with circulation pumps. The valve automatically maintains flow to the required part of the system at the set rate by measuring and immediately adjusting to any variation in pressure. No additional measurements are necessary and the correct flow rate is achieved at all operating conditions. The diaphragm responds to the pressure upstream and downstream of the regulating valve (via an internal impulse line). The valve settings directly affect the volumetric flow through the valve. It is thus possible to set the maximum flow rate based on the flow chart when the valve is fitted. This allows for the balancing of heating circuits, cooling water systems, ceiling cooling and heating panels, air heaters, etc. without any need to first assess the pressure variations in the system. The valve's principal application is as a control valve for terminal units. As it is pressure independent, it maximizes energy efficiency and negates the requirement for DP control valves. In addition to the PIBCV, HERZ Ball Valves (2190) can be fitted in the corresponding flow pipe. If control measurements of the flow rate are required, then STRÖMAX-M valves (4017 M, 4117 M, 4217 GM) must be fitted instead.

### Function

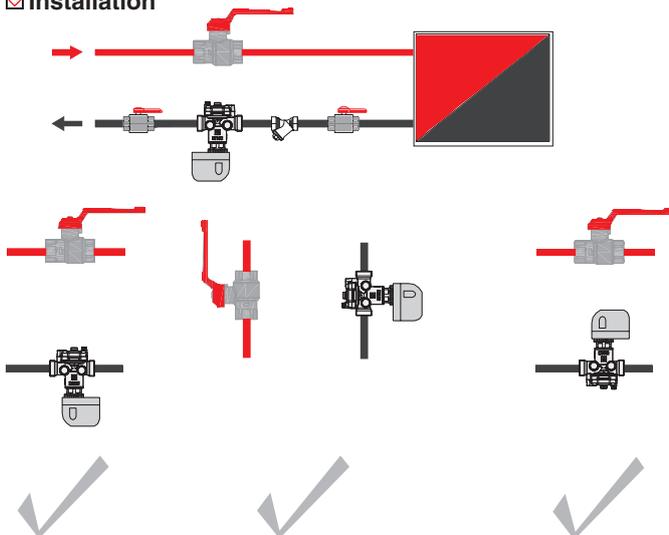


The HERZ-4006 SMART PIBCV has a pressure compensated upper part, so the maximum force required by the thermal drive is 100 Nm for all sizes of valve.

### Materials

Body: dezincification-resistant brass  
 Membranes and O-rings: EPDM  
 Water purity in accordance with the ÖNORM H 5195 and VDI 2035 standards  
 Ethylene and propylene glycol can be mixed to a ratio of 25 - 50 vol. [%].

### Installation



The valve is fitted in the return in any orientation. The arrow on the valve body should align with the direction of flow.

It is recommended that an isolation valve is fitted both upstream and downstream of the PIBCV. The PIBCV may be isolated using the HERZ pre-setting key (1 4006 02).

For pre-setting, turn the key right (clockwise) up to the stop. The setting should then read < 0%.

### kv values

DN 15LF	0,27 m <sup>3</sup> /h
DN 15MF	0,47 m <sup>3</sup> /h
DN 15	0,94 m <sup>3</sup> /h
DN 20	1,71 m <sup>3</sup> /h

**☑ Accessories and spare parts**

- 1 **4117** .. HERZ-STRÖMAX circuit control valves, angle version
- 1 **4217** .. HERZ- STRÖMAX circuit control valves, straight version
- 1 **4017** .. HERZ- STRÖMAX circuit control valves with integrated metering orifice plate
- 1 **4125** .. HERZ shut-off valves, angle version
- 1 **4115** .. HERZ shut-off valves, angle version
- 1 **4215** .. HERZ shut-off valves, straight version, also variants with male threads. For details please refer to the corresponding data sheets.
- 1 **0284** 00 test point adapter set
- 1 **7709** .. HERZ actuating drive for two-point or pulse control
- 1 **7990** .. HERZ actuating drive for continuous control
- 1 **0273** 09 screw plug 1/4

**☑ Pipe connections (with cone seal) for metal pipes**

Pipe		8	10	12	14	15	16	18	22
Valve		DN 15	DN 20						
Nut G		3/4	3/4	3/4	3/4	3/4	3/4	3/4	1
Connection	with metallic seal	1 <b>6274</b> 18	1 <b>6274</b> 00	1 <b>6274</b> 01	1 <b>6274</b> 02	1 <b>6274</b> 03	1 <b>6274</b> 04	–	1 <b>6273</b> 01
Connection	with soft seal	–	–	1 <b>6276</b> 12	1 <b>6276</b> 14	1 <b>6276</b> 15	1 <b>6276</b> 16	1 <b>6276</b> 18	–

Compression union for calibrated soft steel and copper pipes (for details please refer to the corresponding data sheets)

**☑ Pipe connections (with cone seal) for plastic pipes**

Pipe	10 x 1,3	14 x 2	15 x 2,5	16 x 2	16 x 2,2	17 x 2	17 x 2,5	18 x 2,5	18 x 2
Valve	DN 15								
Nut G	3/4	3/4	3/4	3/4	3/4	3/4	3/4	3/4	3/4
Connection	1 <b>6098</b> 18	1 <b>6098</b> 02	1 <b>6098</b> 16	1 <b>6098</b> 03	1 <b>6098</b> 12	1 <b>6098</b> 04	1 <b>6098</b> 05	1 <b>6098</b> 06	1 <b>6098</b> 07

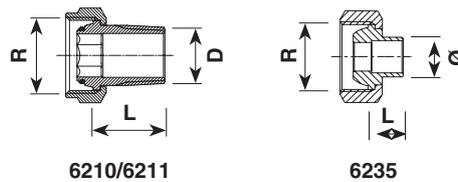
Pipe	20 x 2	20 x 3,5	20 x 2,5	25 x 3,5	26 x 3
Valve	DN 15	DN 15	DN 15	–	–
Nut G	3/4	3/4	3/4	–	–
Connection	1 <b>6098</b> 08	1 <b>6098</b> 10	1 <b>6098</b> 11	–	–
Valve	DN 20	–	–	DN 20	DN 20
Nut G	1	–	–	1	1
Connection	1 <b>6198</b> 12	–	–	1 <b>6198</b> 00	1 <b>6198</b> 01

Plastic pipe connections for PE-X, PB and aluminium composite pipes (for details please refer to the corresponding data sheets)

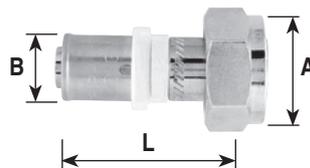
When installing soft steel or copper pipes with a pipe wall of 1 mm or less with compression unions, we recommend the use of support sleeves (order no.: 1 0674 xx). When installing plastic pipes, suitable calibration tools are needed. Please refer to our instruction manual. For proper installation use silicone oil to lubricate the thread of the locking nut or olive screw as well as the olive.

- 1 **6220** .. Iron pipe connection, consisting of nut, seal and pipe nipple with male pipe thread
- 1 **6236** .. Soldering connection, consisting of nut, seal and soldering nipple
- 1 **6240** .. Welding connection, consisting of nut, seal and welding nipple
- 1 **6210** .. Iron pipe connection consisting of nut, seal and pipe nipple with male pipe thread
- 1 **6235** .. Soldering connection, consisting of nut, seal and soldering nipple

**HERZ-Connection elements**



Valve dimension	Order number	R	D	ø	L
DN 15	1 6210 21	3/4	1/2	-	25
DN 15	1 6210 26	3/4	1/2	-	21
DN 15	1 6210 11	3/4	1/2	-	30
DN 15	1 6211 00	3/4	3/8	-	24
DN 20	1 6210 02	1	3/4	-	30
DN 20	1 6210 12	1	1/2	-	30
DN 15	1 6235 21	3/4	-	12	13
DN 15	1 6235 31	3/4	-	15	13
DN 15	1 6235 41	3/4	-	18	18
DN 20	1 6235 12	1	-	18	18



Valve dimension	Order number	A	B	L
DN 15	P 7014 81	G 3/4	14 x 2	50
DN 15	P 7016 81	G 3/4	16 x 2	50
DN 15	P 7018 81	G 3/4	18 x 2	50
DN 15	P 7020 81	G 3/4	20 x 2	50

**Tips**

The valves must be installed for the correct application using clean fittings. A HERZ strainer (4111) should be fitted to prevent impurities.

Ammonia contained in hemp can damage brass valve bodies, EPDM gaskets can be affected by Mineral oils lubricants and thus lead to failure of the EPDM seals. Please refer to manufacturers documentation when using ethylene glycol products for frost and corrosion protection.

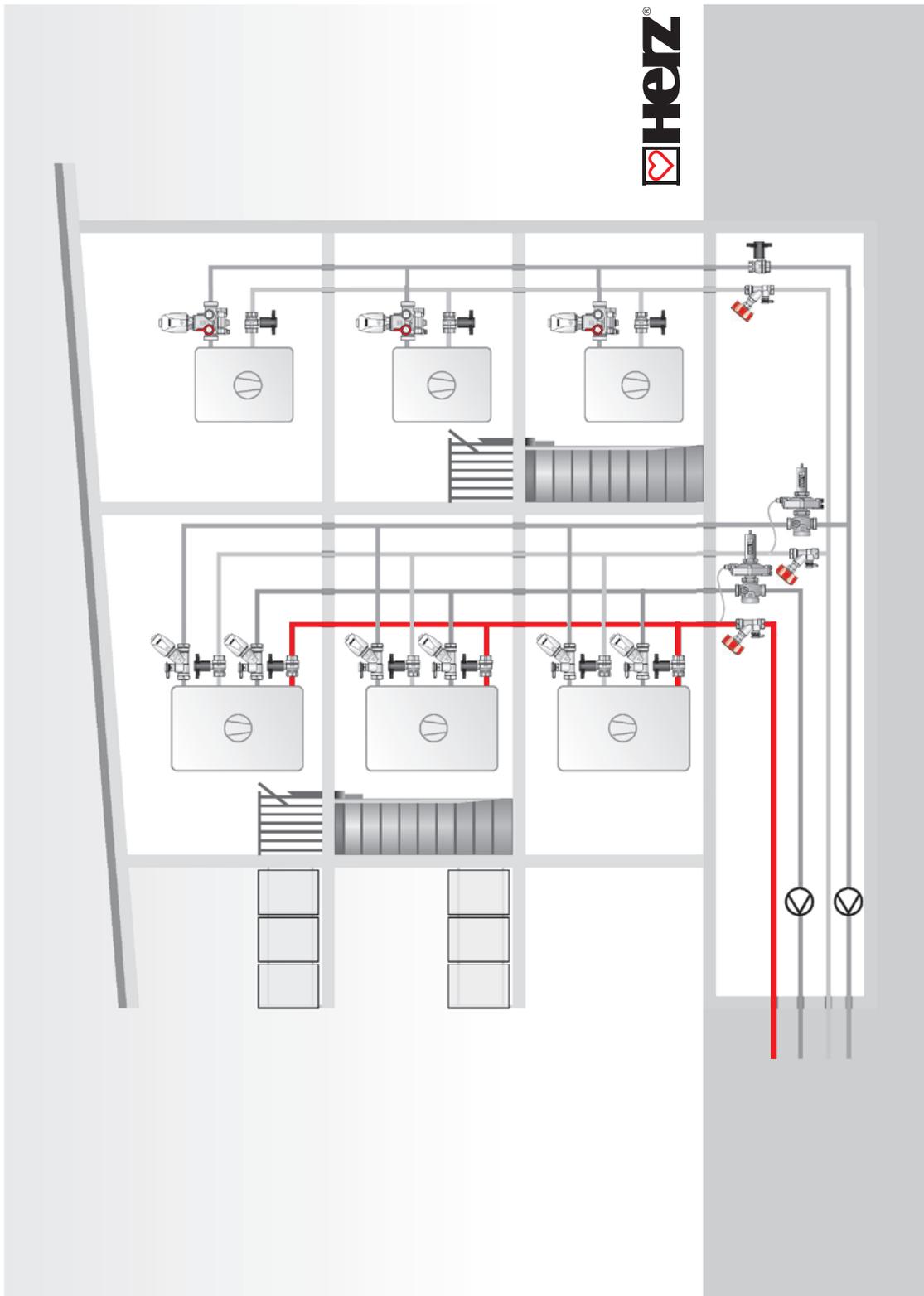
**Test points**

Two test points are fitted on the same side of the valve and factory sealed. Thanks to this arrangement they are easily accessible and measurement devices can be quickly fitted, no matter in what position the valve has been installed.

**Pre-setting**

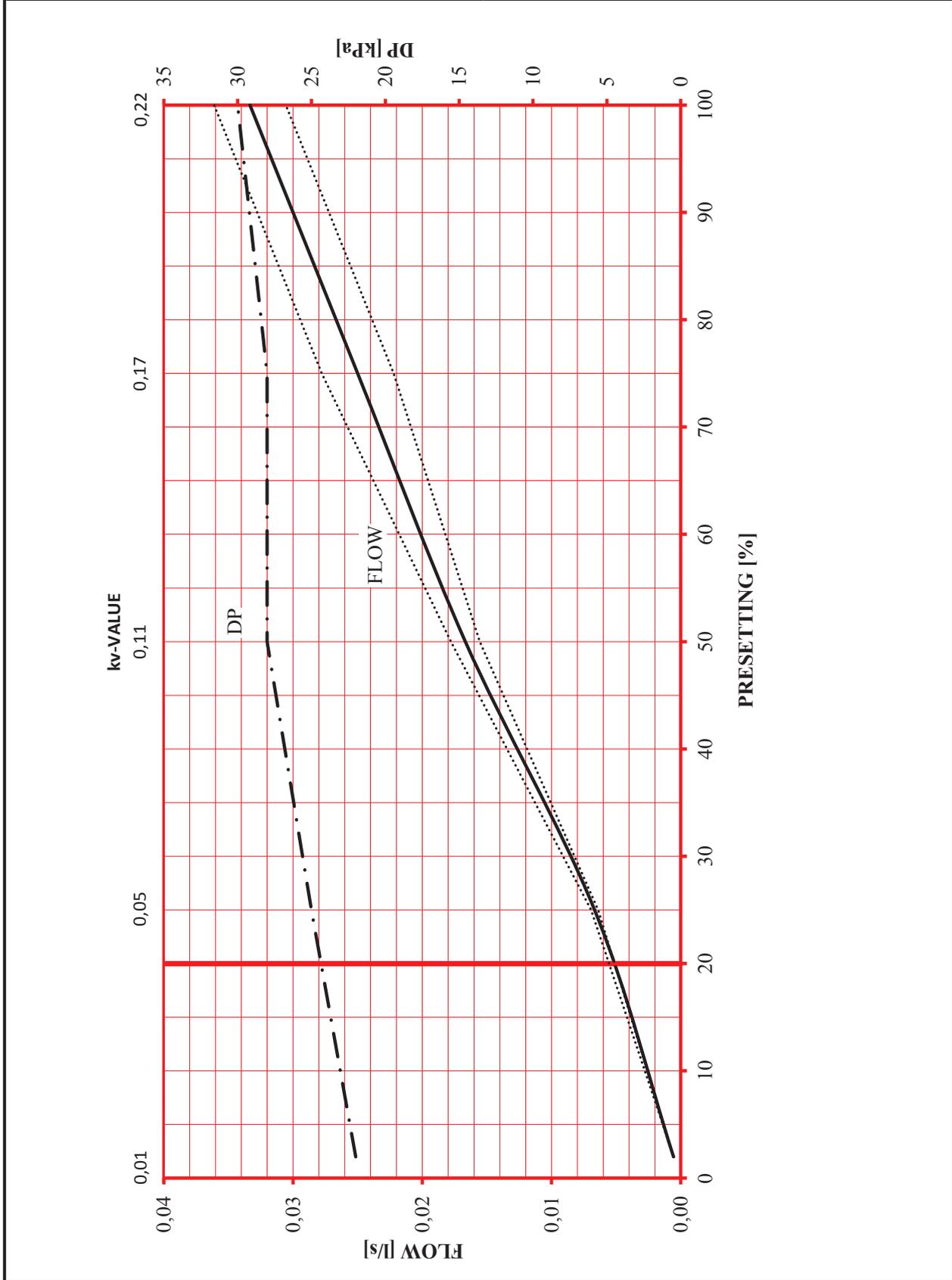
The valve setting is clearly shown in percent. The preset value can be easily adjusted. The preset PIBCV can be isolated at any time or adjusted to the required flow rate.

Application examples

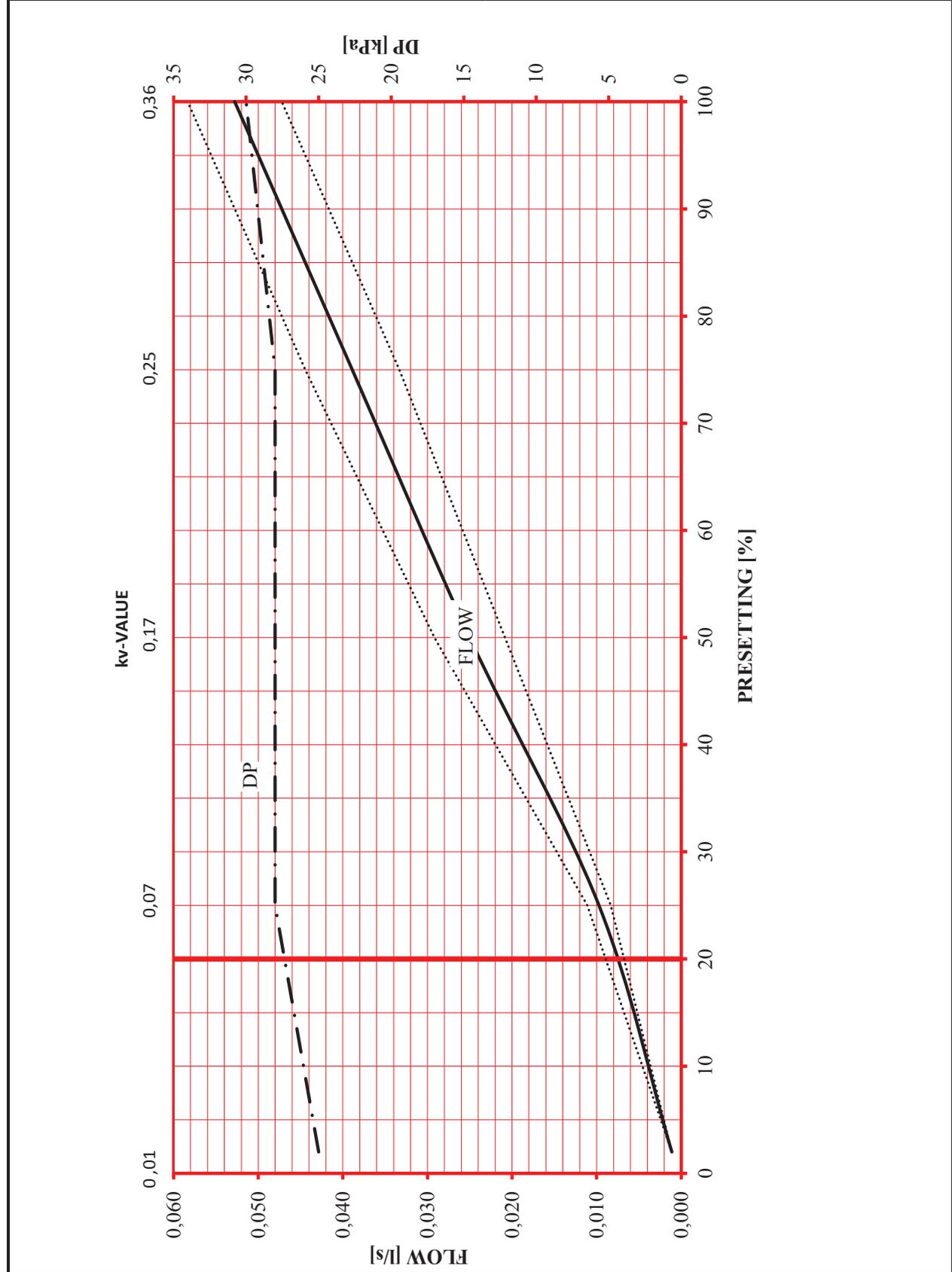


**Please note:** all diagrams are indicative in nature and do not claim to be complete.  
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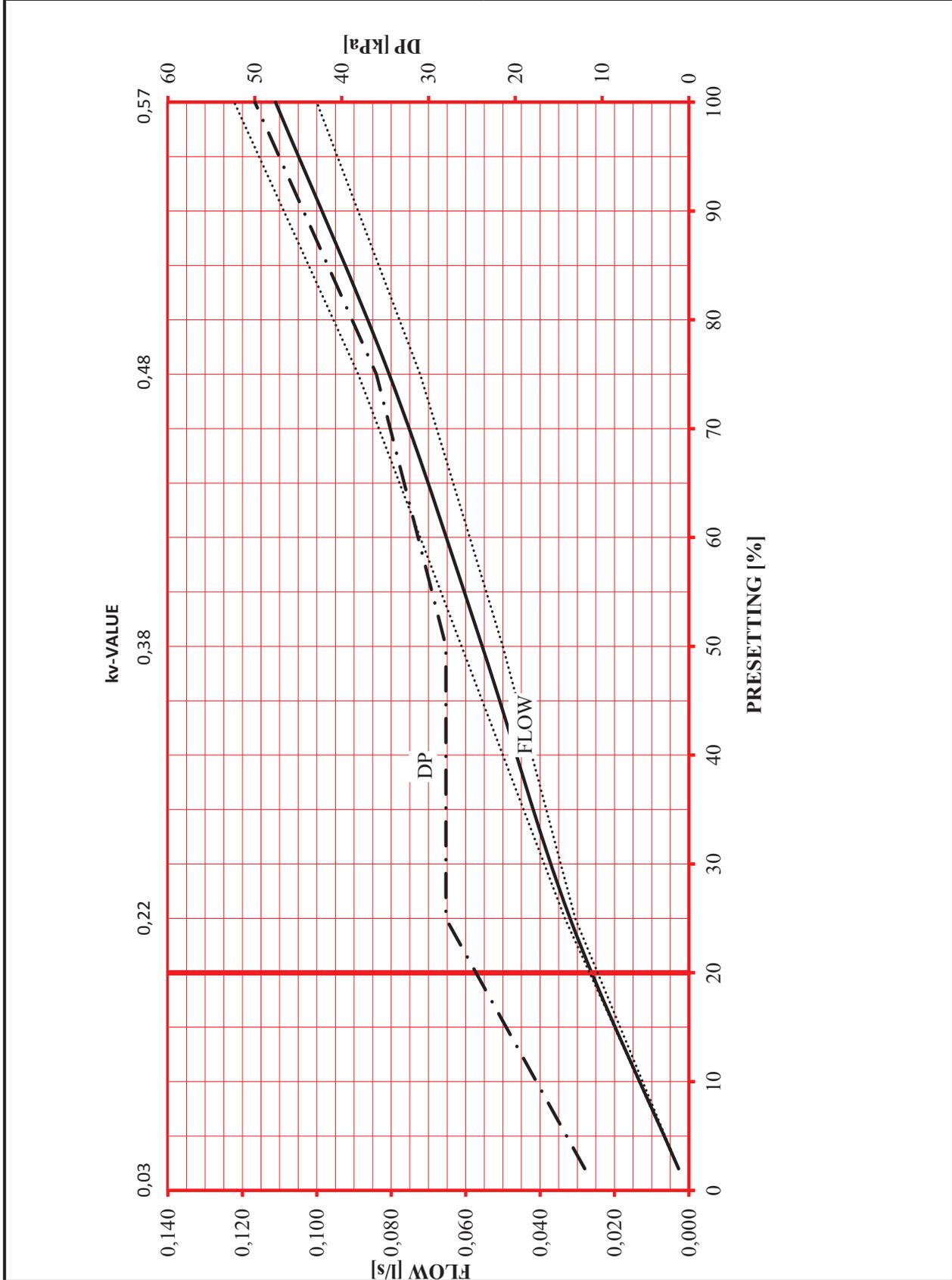
HERZ standard diagram	HERZ - 4006 SMART
Art. Nr.: 1 <b>4006 20</b> , 1 <b>4006 60</b>	DN 15 LF



HERZ standard diagram	HERZ - 4006 SMART
Art. Nr.: 1 <b>4006</b> 29, 1 <b>4006</b> 69	DN 15 MF



HERZ standard diagram	HERZ - 4006 SMART
Art. Nr.: 1 <b>4006</b> 21, 1 <b>4006</b> 61	DN 15



HERZ standard diagram	HERZ - 4006 SMART
Art. Nr.: 1 <b>4006</b> 22, 1 <b>4006</b> 62	DN 20

